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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,576	07/28/2003	John LeRoy Parker JR.	8245.057	5022
30589	7590	01/24/2005	EXAMINER	
DUNLAP, CODDING & ROGERS P.C. PO BOX 16370 OKLAHOMA CITY, OK 73113			LAM, CATHY FONG FONG	
			ART UNIT	PAPER NUMBER
			1775	

DATE MAILED: 01/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/632,576	PARKER ET AL.	
Examiner	Art Unit		
Cathy Lam	1775		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 27 May 2004.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 46-60 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 46-60 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 20 October 2003 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10-20-2003.  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_.

In view of the preliminary amendment filed on May 24, 2004, the pending claims are unpatentable as following:

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 46-49 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ishikawa et al (US 5243142).

Ishikawa discloses a double-sided printed wiring board comprised of an insulating substrate (1), via hole, conductive paste (5) and conductive foils (6).

The via hole is formed in the thickness direction of the insulating substrate (1) and conductive paste is formed into the via hole. Two copper foils (6) are formed onto the surfaces of the insulating substrate (1) and covering the conductive paste filled via hole (col 3 L 52-57). The copper foils (6) have a thickness of 15  $\mu\text{m}$  (ie. 0.59 mil) and are then etched to form a desired pattern (col 4 L 62-65).

The examiner takes the position that the via hole is “closed” by the copper foils (6) to form a blind via hole.

3. Claims 50-52 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Otani et al (US 5277787).

It is noted by the Examiner that some claims involved product by process limitations. It is the product itself which must be new and unobvious. Unless some

unexpected result is shown that occurs due to Applicant's specific process(es), different processing steps are not patentably distinguishing for claims to an article.

Otani discloses a printed wiring board comprised of an insulating base (3), two copper foils (2), via holes (4), conductive ink (5) and copper plate layer (6).

The via holes (4) are formed in the thickness direction of the insulating base (3), the conductive ink is filled into the via holes (4) (col 2 L 27-28). Two copper foils (2) having thickness of 18  $\mu\text{m}$  (or. 0.7 mil) is formed onto both surfaces of the insulating base (3) (col 2 L 20-24).

Two copper plate layers (6) are formed over the surfaces of the copper foil plated insulating base and the conductive ink filled via holes (col 2 L 32-36).

A circuit pattern for providing a mounting land can be achieved by using dry film and by etching (col 2 L 37-43).

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 53-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (US 5319159) in view of Ishikawa et al (US 5243142) or Hayakawa et al (US 4383363).

Watanabe discloses a printed wiring board comprised of an insulating base layer (1), via holes, two copper plating layers (10 & 11).

Via holes are formed in the thickness direction of the insulating base layer (1). A flowable resin material (1) is filled into the via holes (col 4 L 10-20).

Two copper layers (10&11) are firstly and secondly plated onto the same surface of the insulating base layer (1) and covering the filled via holes (col 4 L 24-32). The copper plated area is then etched to form a desired conductive pattern or land (col 4 L 38-41).

Watanabe does not teach the resin material (9) filled into the via holes is a conductive paste or a conductive ink.

Both Ishikawa and Hayakawa teach a printed wiring board having via holes formed in the thickness direction of an insulating layer. The via holes are filled with a conductive paste or a conductive ink.

In Ishikawa, the conductive paste is comprised of a metal powder such as copper, silver and noble metal, etc. and a resin material (col 2 L 60-68).

In Hayakawa, the conductive paste is a silver paste or a solder paste (col 4 L 12-14).

In view of the prior art teachings, it would have been obvious to use a conductive paste that contains copper, silver or noble metals, to fill into the via holes because such materials are conventional and easily be managed.

#### ***Double Patenting***

6. Claims 50-60 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 5-18 are of U.S. Patent No.

6,303,881. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are structurally and materially the same.

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cathy Lam  
Primary Examiner  
Art Unit 1775

cfl  
January 19, 2004